



Table of Contents

VOLUME 109

Instructions to Authors

v

INVITED REVIEW

Virtual reality: a tutorial

M. Carrozzo, F. Lacquaniti (Italy)

1

ORIGINAL RESEARCH ARTICLES

Soleus H-reflex to S1 nerve root stimulation

Y. Zhu, A. Starr, S. Haldeman, J.K. Chu, R.A. Sugerman (USA)

10

Decrease in nerve temperature: a model for increased temporal dispersion

G.J.M. Rutten, R.D.A. Gaasbeek, H. Franssen (The Netherlands)

15

Phasic and tonic reflexes evoked in human antagonistic wrist muscles by tendon vibration

F.W.J. Cody, N.C. Henley, L. Parker, G. Turner (UK)

24

Number and relative size of thenar motor units in ALS patients: application of the adapted multiple point stimulation method

F.C. Wang, P.J. Delwaide (Belgium)

36

Electrophysiological studies in mild idiopathic carpal tunnel syndrome

P. Girlanda, A. Quartarone, S. Sinicropi, C. Pronesti, C. Nicolosi, V. Macaione, G. Picciolo, C. Messina (Italy)

44

Task-related coherence and task-related spectral power changes during sequential finger movements

P. Manganotti, C. Gerloff, C. Toro, H. Katsuta, N. Sadato, P. Zhuang, L. Leocani, M. Hallett (USA)

50

Evoked isometric muscle contractions in myopathies: analysis of pathophysiological properties by different stimulus patterns

U. Dillmann, G. Heide, G. Krämer, H.C. Hopf, K. Schimrigk (Germany)

63

Asymmetry of cortical excitability revealed by transcranial stimulation in a patient with focal motor epilepsy and cortical myoclonus

M. Inghilleri, D. Mattia, A. Berardelli, M. Manfredi (Italy)

70

Habituation of lower leg stretch responses in Parkinson's disease

B.R. Bloem, J.P.P. van Vugt, D.J. Beckley, M.P. Remler, R.A.C. Roos (The Netherlands, USA)

73

Magnetic stimulation mapping of motor cortex: factors contributing to map area

G.W. Thickbroom, R. Sammut, F.L. Mastaglia (Australia)

79

Representation of cortical motor function as revealed by stereotactic transcranial magnetic stimulation

T. Krings, C. Naujokat, D. Graf v. Keyserlingk (Germany)

85

Magnetic stimulation over different brain regions: no differential effects on the elicited sympathetic skin responses

L. Niehaus, B.-U. Meyer, S. Röricht (Germany)

94

Characteristic response to transcranial magnetic stimulation in Rett syndrome

A. Nezu, S. Kimura, S. Takeshita, M. Tanaka (Japan)

100

Variability in the amplitude of skeletal muscle responses to magnetic stimulation of the motor cortex in man

P.H. Ellaway, N.J. Davey, D.W. Maskill, S.R. Rawlinson, H.S. Lewis, N.P. Anissimova (UK)

104

A simple method for recording motor evoked potentials of lingual muscles to transcranial magnetic and peripheral electrical stimulation

A. Ghezzi, S. Baldini (Italy)

114

A data dependent computer algorithm for the detection of muscle activity onset and offset from EMG recordings

J.K. Leader III, J.R. Boston, C.A. Moore (USA)

119

Concentric needle recording characteristics related to depth of tissue penetration

D. Dumitru, J.C. King (USA)

124

Locomotor training in paraplegic patients: a new approach to assess changes in leg muscle EMG patterns

Th. Erni, G. Colombo (Switzerland)

135

Locomotor capacity and recovery of spinal cord function in paraplegic patients: a clinical and electrophysiological evaluation V. Dietz, M. Wirz, G. Colombo, A. Curt (Switzerland)	140
Event-related beta synchronization after wrist, finger and thumb movement G. Pfurtscheller, K. Zalaudek, C. Neuper (Austria)	154
Influence of chronic administration of L-DOPA on event-related desynchronization of mu rhythm preceding voluntary movement in Parkinson's disease L. Defebvre, J.L. Bourriez, Ph. Derambure, A. Duhamel, J.D. Guieu, A. Destee (France)	161
Effects of tactile interference stimulation on somatosensory evoked magnetic fields following tibial nerve stimulation D. Naka, R. Kakigi, S. Koyama, J. Xiang, H. Suzuki (Japan)	168
Waveform and habituation of sympathetic skin response M. Toyokura (Japan)	178
Eye movement abnormalities in myotonic dystrophy M. Versino, A. Romani, R. Bergamaschi, R. Callicco, S. Scolari, R. Poli, S. Lanfranchi, G. Sandrini, V. Cosi (Italy)	184
Evident trans-synaptic degeneration of motor neurons after stroke: a study of neuromuscular jitter by axonal microstimulation C.-W. Chan (China)	199
Force regulation is deficient in patients with parietal lesions: a system-analytic approach H.-C. Scholle, U. Bradl, H. Heftner, C. Dohle, H.-J. Freund (Germany)	203
Stumbling reactions in man: influence of corticospinal input M.E. Keck, M. Pijnappels, M. Schubert, G. Colombo, A. Curt, V. Dietz (Switzerland, The Netherlands, Germany)	215
Cortical silent period evoked by transcranial magnetic stimulation in ischemic stroke J.-P. Ahonen, M. Jehkonen, P. Dastidar, G. Molnár, V. Häkkinen (Finland)	224
Interhemispheric inhibition in patients with multiple sclerosis B. Borojerdi, M. Hungs, M. Mull, R. Töpper, J. Noth (Germany)	230
Modeling direct activation of corticospinal axons using transcranial electrical stimulation V. Suihko (Finland)	238
Discharge pattern of human motor units during dynamic concentric and eccentric contractions A. Kossev, P. Christova (Bulgaria)	245
EMG fatigue patterns accompanying isometric fatiguing knee-extensions are different in mono- and bi-articular muscles G. Ebenbichler, J. Kollmitzer, M. Quittan, F. Uhl, C. Kirtley, V. Fialka (Austria)	256
Increased excitability of the human corticospinal system with hyperventilation M. Seyal, B. Mull, B. Gage (USA)	263
Median mixed and sensory nerve conduction studies in carpal tunnel syndrome S.N. Scelsa, S. Herskovitz, P. Bieri, A.R. Berger (USA)	268
Subclinical neuropathy in type I diabetic children D. Meh, M. Denišlić (Slovenia)	276
Long-latency response to transcranial magnetic stimulation in patients with hemifacial spasm A. Kojima, T. Ohira, M. Takase, T. Kawase (Japan)	285
Reproducibility of electromyographic recordings of submaximal concentric and eccentric muscle contractions in humans S.D.G. Finucane, T. Rafeei, J. Kues, R.L. Lamb, T.P. Mayhew (USA)	290
Latency of changes in spinal motoneuron excitability evoked by transcranial magnetic brain stimulation in spinal cord injured individuals N. Alexeeva, J.G. Broton, B. Calancie (USA)	297
Carpal tunnel syndrome in childhood: study of 6 cases A. Cruz Martínez, J. Arpa (Spain)	304
Responses of masseter muscles to transcranial magnetic stimulation in patients with amyotrophic lateral sclerosis C. Trompetto, C. Caponnetto, A. Buccolieri, R. Marchese, G. Abbruzzese (Italy)	309
Magnetoneurographic 3D localization of conduction blocks in patients with unilateral S1 root compression B.-M. Mackert, G. Curio, M. Burghoff, L. Trahms, P. Marx (Germany)	315
Pharmacological control of facilitatory I-wave interaction in the human motor cortex. A paired transcranial magnetic stimulation study U. Ziemann, F. Tergau, S. Wischer, J. Hildebrandt, W. Paulus (Germany)	321
Electrodiagnostic methods for neurogenic dysphagia C. Ertekin, Y. Aydogdu, N. Yüceyar, S. Tarlaci, N. Kiyiloelü, M. Pehlivan, G. Çeleby (Turkey)	331
Time dependent selective recurrent discharge of motor units in F-response S. Pradhan (India)	341
Anticipatory postural adjustments in conditions of postural instability A.S. Aruin, W.R. Forrest, M.L. Latash (USA)	350
Coupling between single muscle spindle afferent and EMG in human wrist extensor muscles: physiological evidence of skeletofusimotor (beta) innervation N. Kakuda, T. Miwa, M. Nagaoka (Japan)	360

Cortical motor neuron excitability during cutaneous silent period	
K. Kaneko, S. Kawai, T. Taguchi, Y. Fuchigami, H. Yonemura, H. Fujimoto (Japan)	364
Peculiarity of soleus motor potentials evoked by transcranial magnetic stimulation and electrical stimulation of tibial nerve	
D. Wozniak-Dyjas, C. Glazowski, M. Niewiadomska (Poland)	369
Effect of electrical stimulation of the thalamic Vim nucleus on hand tremor during stereotactic thalamotomy	
A. Takahashi, K. Watanabe, K. Satake, M. Hirato, C. Ohye (Japan)	376
Reduced baroreflex sensitivity and cardiorespiratory transfer in amyotrophic lateral sclerosis	
D. Linden, R.R. Diehl, P. Berlit (Germany)	387
Cortico-cortical inhibition of the motor cortical area projecting to sternocleidomastoid muscle in normals and patients with spasmodic torticollis or essential tremor	
R. Hanajima, Y. Ugawa, Y. Terao, K. Sakai, T. Furubayashi, K. Machii, H. Uesugi, H. Mochizuki, I. Kanazawa (Japan)	391
Comparison of descending volleys evoked by transcranial magnetic and electric stimulation in conscious humans	
V. Di Lazzaro, A. Oliviero, P. Profice, E. Saturno, F. Pilato, A. Insola, P. Mazzone, P. Tonali, J.C. Rothwell (Italy, UK)	397
Postural reflexes in patients with HIV-1 infection	
D.J. Beckley, B.R. Bloem, E.M. Martin, V.P. Panzer, M.P. Remler (USA, The Netherlands)	402
Facilitation of motor evoked potentials (MEPs) in first dorsal interosseous (FDI) muscle is dependent on different motor images	
S. Yahagi, T. Kasai (Japan)	409
Clinical and electrophysiological findings and follow-up in tarsal tunnel syndrome	
M. Mondelli, F. Giannini, F. Reale (Italy)	418
Dependence of the transcranially induced silent period on the 'instruction set' and the individual reaction time	
J. Mathis, D. de Quervain, C.W. Hess (Switzerland)	426
Relation between the size of motor units and the spectral characteristics of their action potentials	
K. Seki, M. Narusawa (Japan)	436
Cortical activation during fast repetitive finger movements in humans: steady-state movement-related magnetic fields and their cortical generators	
C. Gerloff, N. Uenishi, T. Nagamine, T. Kunieda, M. Hallett, H. Shibasaki (USA, Japan)	444
Human somatosensory evoked magnetic fields to vibratory stimulation of the index finger: is there frequency organization in SI?	
I. Hashimoto, T. Mashiko, T. Kimura, T. Imada (Japan)	454
The physiological origin of the slow afterwave in muscle action potentials	
Z.C. Lateva, K.C. McGill (USA)	462
Galvanic stimulation evokes short-latency EMG responses in sternocleidomastoid which are abolished by selective vestibular nerve section	
S.R.D. Watson, P. Fagan, J.G. Colebatch (Australia)	471
H-reflex modulations during voluntary and automatic movements following upper motor neuron damage	
C.T. Leonard, P.M. Diedrich, T. Matsumoto, T. Moritani, J.A. McMillan (Japan, USA)	475
Body position can be monitored in 3D using miniature accelerometers and earth-magnetic field sensors	
B. Kemp, A.J.M.W. Janssen, B. van der Kamp (The Netherlands)	484
Reduced excitability of the cortico-spinal system during the warning period of a reaction time task	
T. Touge, J.L. Taylor, J.C. Rothwell (Japan, Australia, UK)	489
Can medical audit change electromyographic practice?	
N.B. Finnerup, B. Johnsen, A. Fuglsang-Frederiksen, M. de Carvalho, P. Fawcett, R. Liguori, W. Nix, I. Schofield, A. Vila (Denmark, Portugal, UK, Italy, Germany, France)	496
Age-dependent changes in physiological threshold asymmetries for the motor evoked potential and silent period following transcranial magnetic stimulation	
K. Matsunaga, T. Uozumi, S. Tsuji, Y. Murai (Japan)	502
Conditioning of the masseter inhibitory reflex by homotopically applied painful heat in humans	
O.K. Andersen, P. Svensson, J. Ellrich, L. Arendt-Nielsen (Denmark, Germany)	508
Immediate effects of therapeutic facilitation on the gait of hemiparetic patients as compared with walking with and without a cane	
S. Hesse, M.T. Jahnke, A. Schaffrin, D. Lucke, F. Reiter, M. Konrad (Germany)	515
CASE REPORTS	
A case of Guyon syndrome with neuroapraxic block resolved after surgical decompression	
L. Padua, A. Insola, M. Lomonaco, F.G. Denaro, R. Padua, P. Tonali (Italy)	191
Delayed focal involvement of upper motor neurons in the Madras pattern of motor neuron disease	
R. Massa, A. Scalise, C. Iani, M.G. Palmieri, G. Bernardi (Italy)	523

TECHNICAL NOTE

- A custom designed system to measure corticospinal tract jitter
M. Mihelin, R.M. Liscic (Slovenia, Croatia)

194

Erratum

385

Index of Authors to Volume 109

527

Index of Subjects to Volume 109

531

Table of Contents to Volume 109

539

